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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/773,247	02/01/2001	Ming-Yee Chiu	P2000,0009US	4336
7590 03/10/2004			EXAMINER	
Epping, Hermann & Fischer Ridlerstrasse 55 Munich, 80339 GERMANY			DESIRE, GREGORY M	
			ART UNIT	PAPER NUMBER
			2625	

DATE MAILED: 03/10/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/773,247

Applicant(s)

CHIU, MING-YEE

Examiner

Gregory M. Desire

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 8-10 is/are rejected.
- 7) ☒ Claim(s) 2-7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 2/1/01 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lubliner et al. (5,559,894) in view of Maruo (6,250,809).

Regarding claims 1 and 10 Lubliner discloses,

Recording a digitized image of the meter (note col. 4 lines 7-10, visually scans meter located at the inspection station);

Extracting a set of edge points, the points representing the graduation segments (note col. 4 lines 19-27, ocr operation extracts edge points representing meter characteristic)

Performing Hough transforms on the set of edge points so as to obtain a center point of the graduation segments; and

Extracting an intensity profile of the image along a path through the graduation segments and a position of the needle relative to the graduation segments (note col. 4 lines 27-35, extracts positions of needles relative to graduation segments).

Lubliner is silent performing Hough transforms on the set of edge points so as to obtain a center point of the graduation segment. However, Maruo performs Hough transforms on the set of edge points to obtain a center point of the graduation segment

(note fig. 2 block 503 in connection with col. 13 lines 7-15 and col. 13 lines 28-35, lines cite Hough transformation, wherein a section of center coordinates is chosen).

Therefore it would have been obvious to one having ordinary skills in the art to perform Hough transformation in the system of Lubliner as evidence by Maruo. Lubliner extracts data sets from an image of a meter. Maruo in the same field endeavor performs Hough transformation quantifying linear components to facilitate image retrieving.

Regarding claim 8 Lubliner and Maruo discloses,

Obtaining a set of edge points in a predefined area surrounding the center point
Maruo col. 11 lines 19-22, edge detection operation obtains set of edge points in a predefined are of surrounding pixels);

Performing a Hough transform on the set of edge points in a predefined area
(Maruo note col. 11 lines 41-43, performs Hough transform on the binarized edge points in a predefined area);

Obtaining a pivot center of the needle (note Maruo col. 12 lines 8-30, line explain obtain center of a line); and

Projecting the detected position of the needle to a plane of a graduation scale
(note Lubliner col. 4 lines 30-32).

Regarding claim 9 Lubliner and Maruo discloses,

Comparing the position of the needle to the detected graduation segments so as to obtain a digital value for a display status of the meter (note col. 4 lines 32-35, digital value is obtained based on position of the needle);

Comparing the digital value to a preset value (note Lubliner, col. 4 lines 36-40, data compared with pre-set); and

Transmitting a message to a control station via a communication network (note Lubliner col. 5 lines 8-15 and col. 7 lines 57-59, transport to a testing site via communication network)

Allowable Subject Matter

3. Claims 2-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter for dependent claim 2. Obtaining a position of a center point when parameter meets a predefined condition and Performing Hough transform so as to obtain a center point when parameter does not meet predefined condition. These features in combination with other limitations are not taught in the prior art. Claims 3 and 6 depend on claim 2, therefore also objected.

Regarding claim 4

Limitations further limit Hough transform to comprise obtaining candidate segment orthogonal to an edge gradient, obtaining extreme value of the distribution of the candidate segment and obtaining a centroid of the extreme value. This is not taught in the prior art in combination with the other limitations.

Regarding claim 5.

Limitations further limit the intensity profile to a set of local extreme values comprising a number of the extreme value with a predefined range. This limitation in combination with the other features is not taught in the prior art. Claim 7 is dependent on claim 5.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory M. Desire whose telephone number is (703) 308-9586. The examiner can normally be reached on M-F (8:30-6:00) Second Monday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (703) 308-5246. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

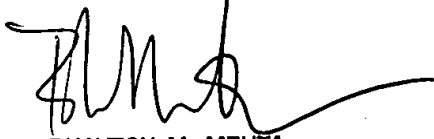
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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gregory M. Desire
Examiner
Art Unit 2625

G.D.
March 5, 2004



BHAVESH M. MEHTA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600